



IEC 60695-11-10

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ISO 4589-1/-2

UL 94

UL 746A

SANTOPRENE® 251-70W232

SANTOPRENE®

A soft, colorable, flame retardant thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material has good fluid resistance and contains non-ether brominated flame retardants. It does not contain metal deactivators. This grade of Santoprene® TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding, extrusion or blow molding. It is polyolefin based and recyclable within the manufacturing stream.

Key Features

- · UL listed: file #QMFZ2.E80017, Plastics Component; file #QMFZ8.E80017, Plastics Certified For Canada Component.
- · Recommended for applications requiring a flame retardant material UL 94 Vertical Flame rated.
- · Recommended for applications requiring excellent flex fatigue resistance.
- · Recommended for applications requiring excellent ozone resistance.

Product information			
Resin Identification	TPV		ISO 1043
Part Marking Code	>TPV<		ISO 11469
Rheological properties			
Moulding shrinkage, parallel	1.3 ^[1]		ISO 294-4, 2577
Moulding shrinkage, normal	0.6 ^[1]	%	ISO 294-4, 2577
[1]: 2.0 mm thickness, min. 24 hours after molding, per test method	TPE-X0080		
Typical mechanical properties			
Tensile stress at 100% elongation, perpendicular	2.7	MPa	ISO 37
Tensile stress at break, perpendicular	6.3	MPa	ISO 527-1/-2 or ISO 37
Elongation at break, perpendicular	550	%	ISO 527-1/-2 or ISO 37
Shore A hardness, 15s	75		ISO 48-4 / ISO 868
Thermal properties			
RTI, electrical, 1.5mm	90	°C	UL 746B
RTI, electrical, 3.0mm	90	°C	UL 746B
RTI, strength, 1.5mm	85	°C	UL 746B
RTI, strength, 3.0mm	90	°C	UL 746B
Flammability			
Burning Behav. at 1.5mm nom. thickn.	V-0	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes		UL 94
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V-2 class

1 mm

yes

PLC3 s

26 %

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Burning Behav. at thickness h

Hot Wire Ignition, 1.5mm

Thickness tested

UL recognition

Oxygen index





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Electrical properties

Relative permittivity, 60Hz

Comparative tracking index, 23 °C

Arc Resistance Performance Level Category

High Amperage Arc Ignition Category, 1.5 mm

PLC 0 class

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Physical/Other properties

Density 1270 kg/m³ ISO 1183

Injection

Drying Recommended	yes
Drying Temperature	80 °C
Drying Time, Dehumidified Dryer	≥3 h
Processing Moisture Content	≤0.08 %
Max. regrind level	20 %
Melt Temperature Optimum	200 °C
Min. melt temperature	190 °C
Max. melt temperature	210 °C
Mold Temperature Optimum	30 °C
Min. mould temperature	10 °C
Max. mould temperature	50 °C

Extrusion

Drying Temperature	82	°C
Drying Time, Dehumidified Dryer	3	h

Characteristics

Processing Injection Moulding, Multi Injection Moulding, Extrusion, Sheet Extrusion, Blow

Moulding

Delivery form Pellets

Special characteristics Flame retardant

Additional information

Non Standard Data

Property Name	Condition	Value	Unit	Standard
Change in Tensile Strength	150°C, 168h	-21	%	ISO 188
Change in Tensile Strain at Break	150°C, 168h	-25	%	ISO 188

Injection molding Holding pressure should be about 50 to 75% of the actual injection pressure.

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A high screw RPM (100 to 200) is recommended.

Back pressure is not always needed, however, a back pressure of 0.3 to 0.7 MPa may be used to ensure a homogeneous melt and maintain a consistent shot size. A higher back pressure is normally employed when using masterbatches.

Processing Notes

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Desiccant drying for 3 hours at 80 °C (180 °F) is recommended. Santoprene® TPV has a wide temperature processing window from 175 to 230 °C (350 to 450 °F) and is incompatible with acetal and PVC.

Santoprene® TPV has a relatively high melt viscosity at low shear rates. Viscosity decreases as the shear rate increases.

Increasing temperature has little effect on TPV melt viscosity. Smaller gates and higher shear rates keep melt viscosity low and improve melt flow. Please also refer to the injection molding guide.

Automotive

OEM ADDITIONAL INFORMATION

General Motors Special Parts Approval, See Your CE Account

Representative for Further Details.

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